REMARKS

This is a response to the August 12, 2005 Office action that was issued in connection with the above-identified patent application. Claims 31-39 and 51-64 were pending in the present application after Applicant's response to a first Office action Restriction Requirement. In the present Office action, claims 31-39, 51-58, and 61 were allowed. The remaining claims (claims 59-60 and 62-64) were not rejected over prior art references but were rejected under 35 U.S.C. § 112, first paragraph, for reciting subject matter that was not described in the specification in sufficient detail to convey the subject matter or enable one to use the subject matter. Applicant respectfully requests reconsideration of the rejections of claims 59-60 and 62-64 for the reasons presented below. Applicant recognizes that the present application is quite lengthy, but Applicant submits that each of the rejected claims was supported by the original specification. For the Examiner's convenience, the following discussion will present at least one cited portion of the specification to support each of the rejected claims.

Claims 59 and 60 depend from allowed claim 35, which recites that the reshaping step includes grinding the compacted structure to remove material therefrom. Claim 59 recites that the compacted structure includes a projecting shoulder and that "the grinding step includes removing material from the projecting shoulder." Claim 60 recites that "the grinding step includes removing material from the compacted structure to [form] an arcuate portion from a projecting edge portion of the compacted structure." Applicant submits that claims 59 and 60 are supported by at least Figs. 17-18 and the two paragraphs beginning on page 57, line 14, of the specification, which are reproduced below for the Examiner's convenience:

> In the graphical examples shown in Figs. 15-17, the sealing process is illustrated with respect to an intermediate structure 170 that includes a projecting portion 182. Such a portion may be a byproduct of the initial compaction process,

for example. Further processing of the intermediate structure may include removing or reshaping the portion from the sealed intermediate or (near) net final shape structures, or other similar physical changes. For example, any suitable grinding or other working process may be used to at least partially, and preferably completely, remove the portion or other undesirable portion of the intermediate structure. Similarly, the above discussed reforming process may be used to alter the shape of the projecting portion, urge the projecting portion into the body of the intermediate structure, etc. ...

In Fig. 18, the illustrative intermediate structure 170 from Fig. 17 is shown with portion 182 removed. As shown, removal of the portion exposes a region, or surface, 184 of the structure that was not previously exposed to the sealant, and as schematically illustrated in exaggerated size, this region may include pores 186 that were not sealed during the first sealing step because of the presence of the portion. Although a grinding process, when used, preferably only removes portion 182 or any other undesirable portion of the intermediate or other compacted structure, some grinding processes may not be adapted for precise removal of only these portions and may therefore remove some material from other regions of the structure. Accordingly, additional unsealed surfaces and/or pores may be exposed during some implementations of the grinding step. Similarly, reshaping the intermediate structure may also expose pores or other voids that may be filled by thereafter (re)sealing the structure. This is schematically illustrated in dashed lines in Fig. 18 at 184' and 186'.

Fig. 17

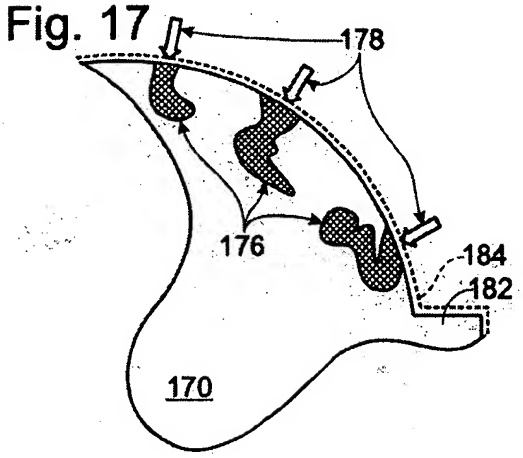
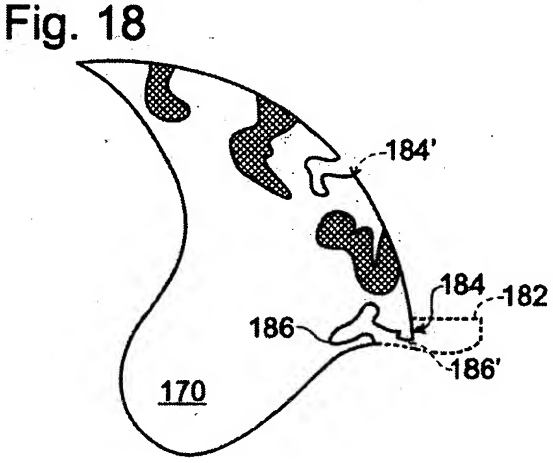


Fig. 18



As discussed above and illustrated in Figs. 17 and 18, the illustrated projecting shoulder, or edge portion, 182 may be removed by a grinding process to produce the arcuate (i.e., curved) configuration shown in Fig. 18. In view of the above, Applicant submits that claims 59

and 60 are properly supported by the original specification. Applicant therefore requests that the rejections of these claims under 35 U.S.C. § 112, first paragraph, be reconsidered and withdrawn. If the Examiner believes that formal amendments to the text of either of these claims is still required to comply with 35 U.S.C. § 112, first paragraph, Applicant requests that the Examiner contact Applicant's undersigned attorney at the number listed below to discuss the particular terms that remain at issue.

Claim 62 depends from allowed claim 61, which in turn depends from allowed claim 36. Claim 36 recites that the method includes strengthening the compacted structure. Claim 61 recites that the strengthening step includes heating the compacted structure. Claim 62 depends from claim 61 and recites that the strengthening step includes "heating the compacted structure to a temperature that is less than the melting point of the at least one binder component." Applicant submits that claim 62 is supported by at least the paragraph that begins on page 15, line 3, of the original specification. This paragraph is reproduced below for the Examiner's convenience. As discussed at the end of the paragraph, the intermediate structure may be heated to a temperature that is near the melting point of the lowest melting component of the intermediate structure.

> The step of reshaping the intermediate structure may be accomplished without heating the intermediate structure. Additionally or alternatively, the intermediate structure may be heated, including heating to the point of annealing and/or sintering, as indicated in Fig. 14 at 136. Although graphically illustrated as occurring after the compression step, one or more types of heating of the intermediate structure and/or article may occur at one or more stages within the formation process, including before, during and/or after the compression step. It also should be understood that heating is not required in some embodiments, and that articles 116 may be produced according to the present disclosure without requiring the composition of matter to be heated. Typically, frangible articles are not sintered, but they may or may not be heated or annealed. Sintering may be either solid-phase sintering, in which the article is heated to near the melting point

of the lowest melting component, or liquid-phase sintering, in which the article is heated to or above the melting point of the lowest melting component.

Applicant notes that claim 62 recites the melting point of the at least one binder component rather than the melting point of the "lowest melting component" of the intermediate structure. To the extent that this difference creates an ambiguity, claim 62 has been amended to recite that the strengthening step includes heating the compacted structure to a temperature that is less than the melting point of a lowest melting one of the at least one tungsten-containing component and the at least one binder component. Applicant submits that amended claim 62 is thereby fully and specifically supported by the original specification. Accordingly, Applicant requests that the rejections of claim 62 under 35 U.S.C. § 112, first paragraph, be withdrawn.

Claim 63 depends from claim 36 and recites that the strengthening step "includes activating at least a portion of the binder component." Upon reflection, Applicant notes that the specification generally refers to activating of a non-metallic binder component. Accordingly, claim 63 has been amended to depend from claim 37, which recites that the at least one binder component further includes at least one non-metallic binder component. While a non-metallic binder component was not precluded from being present in claims 31-36, claim 37 positively recites that the at least one binder component includes at least one non-metallic binder component. Applicant submits that this clarifying amendment resolves the Section 112 issues with respect to claim 63 because the specification is replete with references to activating, or actuating, a binder component to strengthen the compacted structure. For example, see the paragraphs that begin on page 18, line 1, and page 20, line 4, of the original specification. These paragraphs are reproduced for the Examiner's convenience.

Non-metallic, or polymeric, binder 20 may include any suitable polymeric material, or combination of polymeric materials. Examples of suitable polymeric

binders include thermoplastic resins and thermoset resins, which are actuated, or cross-linked, by heating. The binder-actuation processes and techniques described herein may also be referred to as binder-activation processes and techniques. Examples of suitable thermoset resins are melamine and powder-coating epoxies, and examples of suitable thermoplastic resins are nylon (including nylon 6), polyethylene, polyethylene glycol and polyvinyl alcohol. Other suitable polymeric binders are water-actuated polymers, such as Portland cement, vinyl cement and urea formaldehyde, which are actuated by immersion or other contact with water. Still another example of a suitable polymeric binder is a pressure-actuated polymer, such as gum arabic. Still further examples of polymeric binders that may be used are gelatin powder and stearic acid.

...

Polymeric binder, or binder component, 20 may include two or more different types of polymeric or other non-metal binders. For example, a combination of a rigid epoxy and a flexible epoxy may be used to produce an article that has increased strength over a comparable article formed with only a rigid epoxy or only a flexible epoxy. When more than one binder 20 is used, it is preferable that the binders are actuated through the same or compatible mechanisms.

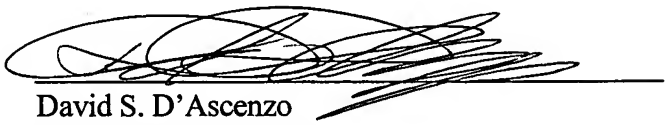
Claim 64 depends from claim 63 and recites that the binder component further includes a curable non-metallic binder component and the activating step "includes curing the curable binder component." Claim 64 stands rejected for failing to properly support this "curing" portion of the recited method. In view of the above clarifying amendment to claim 63, Applicant requests reconsideration of the Section 112 rejections of claim 64, as the specification contains several examples of curing non-metallic binder components. For example, see the first paragraph on page 23 of the specification, which specifically discusses curing, as well as the many references throughout the specification about curing the non-metallic binder component through a suitable actuation process.

In view of the above, Applicant submits that all of the issues raised in the Office action have been addressed. If there are any remaining issues or if the Examiner has any

questions, Applicant's undersigned attorney may be reached at the number listed below. Similarly, if the Examiner believes that a telephone interview may be productive in advancing prosecution of the present application, the Examiner is invited to contact Applicant's undersigned attorney at the number listed below.

Respectfully submitted,

KOLISCH HARTWELL, P.C.



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